RM User

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The Journal of the RM User Group

HELP LINE

The User Group contains a great body of expertise amongst its members and the help-line exists to act as a channel for spreading knowledge and especially answers to your problems.

Remember, your problems are also our problems!

If you are in difficulty, please feel free to ring any of the following numbers. We may not, individually, know the answers, but we hope that we may know someone who knows someone who.....!

Robin Davies:	0902-310360 (home) 0902-305958 (work)
Ken Maynard:	0438-354809 (home) 0438-352467 (work)
John Ward:	0865-725412 (home) 0865-272331 (work)
Tim Davey-Winter	0865-278826 (work)

Anybody else on the committee (see inside back cover) can be contacted if none of the above can help or is available.

Remember, the Group is on TELECOM GOLD **72:90380**

Do feel free to write either to the Editor or the Secretary. This may be especially useful if the problem is long, complicated and non-urgent.

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Editorial

Like an elephant's gestation period, this issue of the journal has been a long-time coming, despite the Editor's best efforts to move from 8-BIT technology in the form of WORDSTAR to the likes of ALDUS PAGEMAKER.

As you can read elsewhere in this issue, producing RM USER by using PAGEMAKER isn't like preparing beans-on-toast. With that meal, no thinking is required: open the tin, cook the beans, toast the bread and in a few minutes it's all done.

Now the hype behind DTP is that a few minutes with a PC, ALDUS PAGEMAKER and a laser printer will produce something akin to the Journal as you know and love it. This is not true! Like the move 15 months ago to A5 format, which involved the considerable step to type-setting from disk, this move to using PAGEMAKER has been rather beset by problems.

My aim in encouraging the move to using DTP software was to achieve more control over the publishing process, speed things up and perhaps save some money in order to publish more frequently and cheaply.

This issue has been beset with problems, most unrelated to me using pagemaker. Our typesetters, new to this game, found themselves unable to do the job and eventually sent the disk off to a firm in Oxford. Sitting waiting for the layout sheets to arrive, I was informed on Friday, 13th, that the disk was lost in the post. Panic-stricken alternative measures had to be used, which explains the very late appearance of the Journal.

I have now made alternative arrangements for the publication of the Journal, to both save a lot of money and to speed up the whole process. The effect of this is that the User Group will now be

publishing a Newsletter in between issues of the Journal that will mean you ought to receive up to 8 publications annually (I hope!). Please send material!

Those of our members who are still beavering away at GCSE Computer Studies will now find the availability of BBC-BASIC86 makes all sorts of useful programs available and the excellent software developed by PETER BISHOP ASSOCIATES very useful for the new dual-certification RSA-GCSE course now available from SEG.

Finally, as all politicians say, there are hundreds of you out there reading this. Please let's have some feedback - both about the Group and the Journal. I am especially keen to hear members' experiences in two areas: silicon disk usage under NIMBUS Network 2 and 380/480z control applications. Do write in (on disk, that is!)

Library News

The 8 most requested volumes in our library at the end June 1987 were:-

VOLUME	REQUESTS
0 Library index.	48
14 Asst. utilities	30
13 Music compiler/player	27
10 Adventure	27
15 ZCPR2 volume 1	24
16 ZCPR2 volume 2	23
17 ZCPR2 volume 3	23
4 BASIC games	23

There is no allowance in these figures for the length of time that each volume has been available. Thus volume 22, which has been requested 6 times in about 3 months, should rate as more popular than volume 4 which has been available for more than 3.5 years. Just thought you might be interested.

Volume 23 is released with this issue and its catalogue is appended. Before I try to describe one of the programs in this volume I need to explain file attributes. This may all be common knowledge in which case the editor can feel free to cut it out but I learnt about it by word of mouth not by reading manuals (what manuals I hear you cry?).

When CP/M version 2.2 was released it became possible to make files "read-only" (R/O) or "system" (SYS) by using the utility STAT. This is achieved by setting the R/O or SYS attribute bit in the filename stored in the directory entry on the disk. Since only 7 bits are needed to define a character the most significant bit (msb) of each of the 11 bytes used to store the filename and extension is unused. The msb of the first byte used to store the filename extension was defined as the R/O attribute bit and the msb of the second byte was defined as the SYS bit. Thus if you have a file TEST.BAS and you look at the directory entry with DUU (volume 8.10) or better still DU (volume 15.18), then the 3 bytes for the filename extension would be 42,41,53 in hex. If the file were set read-only by doing STAT TEST.BAS $R/O<cr> the 3 bytes would be C2,41,53. If the bytes were C2,C1,53 then the file would be both read only and system.

[A file set R/O can only be read. It cannot be altered or erased by an ERA command. A file set SYS is not displayed by the DIR command i.e. it is hidden. The opposite of R/O is R/W (read-write) and of SYS is DIR (directory).]

The msb of the third byte of the filename extension was unofficially called the "archive" attribute bit although its use was never supported by *Digital Research* (DR) who wrote CP/M. Some public domain archive programs do however support it. When you first "back-up" your system such an archive program sets the archive

attribute bit on every file it backs-up or archives. When the system is next backed-up it is only necessary to back-up those files whose archive bites are not set. Any file that has been altered will have had its archive bit reset by CP/M. Much unnecessary duplication of back-up files is thus avoided.

Digital Research did go on to use some of the msbs on the remaining 8 filename bytes for other purposes in MP/M but that is another story.

Incidentally if you DIR a disk, which has files with attribute bits set, on CP/M version 1.4 the 380Z will display graphics characters in the filename. Now you know!

BU12.LBR in volume 23 is a good back-up program with full documentation and a source file written in C thrown in just for good measure. Since I found this one in the U.S. what do users presently use to back up their systems? Do please write and tell me, I am intrigued to know.

SETATT.LBR contains a nice little utility to set/reset any of the attribute bits. It is easier to use than STAT and faster than the ubiquitous NSWP.

What you haven't discovered NSWP yet? The most valuable single utility in our library - volume 14.16. I suspect it's why volume 14 is the most requested volume.

Does anyone know of, or have a utility to display files attributes? I have one but it will not run under CP/M. I have now replaced CP/M with ZDOS which complements ZCPR beautifully. I don't have to do ^C when I have changed disks! Unfortunately it is not public domain although it is only about £30. I can supply more details if anyone is interested.

SRT is the sorting program I mentioned in the last issue whilst KERMIT is the customized 380Z, 380Z-D, 8" or 5.25" version which may well be O.K. on a 480Z as well. A free copy to anyone who is willing and able to try it out.

LANBEL is a tiny utility which puts a zero length file like MATHS.046, in the directory of a disk and optionally also prints it so the you can stick it on the disk for mere humans to read it. The - in the filename ensures that it appears first in alphabetized directory listings output by utilities like SD (volume 14.17). If a label is the first thing you put on a new disk and you then set it R/O it will even appear first in DIR outputs. (DIR lists files in the order in which they are found in the directory.)

For those of you who did not put the label on first, CLEANDIR will rearrange the files in alphabetical order for you as well as cleaning out old erased entries from your directory tracks. Now DIR will do nice alphabetized output, albeit horizontally. Also using CLEANDIR regularly increases the chances of being able to UNERASE successfully. I was staggered to find, having written that last sentence, that there was no UNERASE anywhere in our library, so here is one. UNERASE undoes what ERA did, if possible. Its syntax is UNERASE afn<cr>. You can't afford to be without this one.

TXTTOWS take plain text files and converts them into WORDSTAR document mode files. This column goes to the Editor having been "filtered" by this program so no doubt he will comment if it is not satisfactory (or even if it is).

WSDOCON does the same job but can optionally also convert the other way. Thus it can replace both TXTTOWS and UNSOFT (volume 22.05).

WINDEX is a utility that can produce an index from WORDSTAR files. The documentation claims that the files can be up to 9999 pages long! A really useful program that can save hours of tedious work. It doesn't miss words like humans do either. Question: is the plural of index, indexes or indices?

TAIL and COMP complete volume 23. TAIL types the end of a file. It is smaller and faster than its predecessor on volume 1.17. COMP is a file comparison program. Just type the names of these two utilities to get the built-in help message.

Well that's it for this issue. The fees remain as they were i.e.

copy fee £1.5 for 3/480z, £5 for NIMBUS plus media charge of £1.50 for 5.25" disks, or £2.50 for 8" and 3.5" disks. You only pay the media charge if you do not send a formatted double sided single density disk for each volume you want.

RMNUGL Volume 23. KERMIT, Back-up and other asst. utilities.

-CATALOG.R23 This file.
CRCK .COM Checksum program.
CRCKLIST.R23 Checksums of RMNUGLIB volume 23.
USQ .COM Unsqueezer for *.?Q? files.
CREDITS .R23 List of software authors.

Catalogued by John Ward 10/9/87.

23.01 BU12 .LBR 43K Back-up utility.
23.02 CLEANDIR.COM 2K Alphabetizes and cleans up directory.
23.03 COMP .COM 2K File compare utility.
23.04 KERMIT .COM 13K KERMIT for 380Z.
23.05 KERMIT .DOC 11K Documentation.
23.06 LABEL .COM 2K Makes neat labels for disks.
23.07 SETATT .LBR 18K Set/clear file attributes.
23.08 SRT .LBR 12K Fast and very flexible sorting.
23.09 TAIL .COM 1K Types end of file, faster, smaller than 1.17.
23.10 TXTTOWS .LBR 4K Converts ASCII files to Wordstar document format.

23.11 UNERASE .COM 2K Unerases erased files!
23.12 WINDEX .LBR 10K Generate index from Wordstar file.
23.13 WSDOCON .LBR 5K ASCII<—>WS format converter.

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The command CRCK <cr> will cause the program CRCK to calculate the checksums of all files on this disk and compare them with the values in the file CRCKLIST.R23. If the files occupy more than one side of a small disk the remaining sides may be checked by typing CRCK x:<cr> where x is the drive letter for the side to be checked. You may in this way confirm that your copy of this volume is not corrupted.

USQ [drive:] filename<cr> will unsqueeze the file(s) specified by filename. The optional drive specifies the destination drive for the unsqueezed file. The default is the logged-on drive.

Extract members from .LBR files using NULU (volume 21.04). e.g. NULU -O SRT -Q *.* -X<cr> will extract all member files from SRT.LBR onto logged-on drive unsqueezing them if necessary.

Free IBM & BBC Software

by Mark Bryson

The emulator (IBM.EXE) is a program which allows *some* programs written for the IBM-PC (and XT and AT) to be run on the NIMBUS.

You need a NIMBUS with 768K RAM (or more) and firmware 1.20W (or later). If you have an AX or VX then you don't need the emulator as these models can run IBM-PC compatible software anyway.

One good reason why you might want to use the emulator is because of the vast amount of software available for IBM PCS, much of it free or very cheap and from a wide variety of sources. The NIMBUS UG library is one such, but there are many others too, including IBM-PC user groups and public access bulletin boards.

Lancaster University Computer Services runs a Software Distribution Service which can be contacted with suitable communications software. Some files take a long time to download by 'phone so this method should be considered a 'last-resort'.

Access via the Joint Academic NETwork (JANET) is more suitable.

The NIMBUS was not designed to be compatible with the IBM PC, which overall is probably a good thing; however since the machine itself is so different inside, some IBM programs cannot be served by the emulator and when run they will 'lock-up' your NIMBUS until it is switched off and on again.

All IBM-PC communications software I have tried fits into this category - which is a pity because there is a particularly good selection of this type of program available for IBM-PCS.

The IBM-PC uses 5.25 inch discs and most software will only be available in this form. There are several possible solutions, but the best (if you already have an MD-2 drive unit) is probably to do the modification described in *RM User Vol.2 No.1*, though this only allows you to read single-sided IBM-PC discs.

A second alternative is to transfer the software from another computer (a real IBM or compatible) into NIMBUS via the DCC, PICONET or AUX serial ports using *Kermit*.

The emulator software is supplied by RM together with a small booklet (IBM-PC *Emulator - How to use it PN17320*) which goes into some detail about what types of IBM-PC program you should expect to run successfully using the emulator. You can never be sure before running a program whether it will work, but I have been surprised how few have failed.

IBM-PC programs can often be configured for use with the different display adaptors found on different IBM-PCS. If you have a choice when obtaining or installing your software, then try monochrome mode or Colour Graphics Adaptor (CGA) mode if this option is available. The emulator does not support other display modes.

The emulator is a small (11K) program which is run before loading your IMB-PC software; either in such a way that it terminates (the program ends) but stays resident (some code remains in memory), which is useful if you want to run several IBM-PC programs all using the same display mode; or when using just a single IBM-PC program, you can load the emulator together with the IBM-PC software in such a way that when the application ends, the emulator also ends (terminates) and does *not* stay resident.

I have found the latter method more successful, particularly because it is best if the emulator is not resident when running NIMBUS specific software such as WORD or WINDOWS; also some characteristics (eg. CGA graphics modes) of the emulation can only be specified for one application at a time, ie. they are not retained in the resident

emulator.

A separate batch file for each IBM-PC program seems to be a good idea. The batch loads the emulator together with all required qualifiers (flags) and parameters (such as the program name) and does any other odd jobs, without any chance of forgetting or mis-typing the necessary command(s).

The emulator accepts several qualifiers on the command line, for example IBM/C loads the emulator and specifies CGA display mode. Full details are given in *PN17320*.

I run my IBM-PC software on a NIMBUS with 1024K memory normally partitioned to give a 512K RAM disk, so CONFIG is needed to switch this off (before running the emulator) and on again afterwards. One snag is that the NIMBUS must be re started (by CTRL/ALT/DEL) before the RAM disk change is recognised by the operating system. In fact, apart from the need to twice press CTRL/ALT/DEL this can all be done using a batch file.

The example below shows how the IBM-PC program PC-CALC can be loaded from a batch file.

```
ECHO OFF
CLS
REM batch file to load PC-CALC from directory A:\PC-CALC
REM If you have a large RAM disk you need to do -
REM CONFIG AL SI=0/p  and re-boot before running this file
A:
CD A:\PC-CALC
IBM/M PC-CALC
REM re-install 512K RAM disk by  CONFIG AL SI=8/p  & re-
booting
```

The lists below show the software currently available for the BBC and IMB PC micros at Lancaster University. Some but not all of this software is suitable for use with NIMBUS running either the BBC BASIC

emulator or the IMB-PC emulator.

Software for the BBC micro (or NIMBUS with BBC BASIC emulator?).

A01 A macro assembler that handles 6502/65C02 opcodes. It runs as a sideways ROM or in sideways RAM, and is Tube compatible.

A02 A Small-C compilation system for BBC Micros

A03 A BASIC program to plot out Chaotic sets

A04 The FANFARE Teletext carousel display and mode 7 screen editor for sideways RAM or ROM

D99 Various tools you'll need to convert some of the software to runnable form after collecting it

Software for the IBM PC

E01 The PC-Calc Spreadsheet system
E02 The PC-File Database system
E03 The PC-Write Word Processing System
E04 A Tektronix 4010 emulator
E05 Utility to allow CGA programs to use a Hercules monochrome adaptor
E06
E07 The $_{SPPC}$ Statistics Package
E08 PC-Picture system, for creating pictures and slide shows
E09 The Designer system for animation
E10 The Finance Manager package for home or small business
E11 Utilities to assist writing TSR programs in Turbo-Pascal
E12 INFO-BASE dbase mngr, Forms Generator, Mail Merge program

E15 DBase II programs for Genealogy, Church Management, Chequebook Management
E17 DBase III programs for Home Inventory and Cub Scout Pack Records
E19 Hercules Graphic Card Utilities and programming information
E20 Epson printer utilities
E21 ScreenWright screenplay production system
E22 File Express information management program
E23 Assorted BASIC games
E24 Genealogy programs in BASIC
E25 Clipper DBase II compiler demos
E26 Technical word processing on WordStar for Epson printers
E27 PROCOMM 2.42 Communication package (VT100, Kermit, XModem)
E28 Fast ANSI console
E29 PC-VT Terminal Emulator
E30 ESIE Expert System shell
E31 XLISP object oriented language
E32 PC-DESK II utilities oriented towards label handling
E33 C Screen Editor
E34 DeskMates desk accessories
H99 Various tools you'll need to convert some of the software to runnable form after collecting it

This is a BATCH file which I use to search through old electronic mail and WORD documents. It is useful because single or multiple word 'strings' can be searched for, in one or more files, but with a single command. Unfortunately it *is* case sensitive, so if you use it remember that isn't Isn't *ISN'T*!

SHOW.BAT uses two (DIRLS and EXEC) of the utility programs from Techpack disc 7, (*available via Tech. Support, RM*).

These two, plus MORE and FIND (on your system disc) must be in the default directory or PATH when you run SHOW.

```
ECHO OFF
CLS
REM this file is called SHOW.BAT
IF %1&==& GOTO help
IF %2&==& GOTO help
SET o=%1
:bld
SHIFT
IF %2&==& GOTO blt
SET o=%o% %1
GOTO bld
:blt
DIRLS %1 | EXEC FIND/n %o% $f | MORE
PAUSE
GOTO exit
:help
ECHO %0
ECHO Usage    'SHOW "string" drive\path\filespec'
ECHO      eg.  SHOW "RM User" B:\worddocs\*.doc
PAUSE
:exit
```

Mark can be contacted via TTNS/TELECOM GOLD *on* 01:YMA027 *and via* JANET PSG091

Whittle Systems WS20XW External Winchester

a review by Tim Davey-Winter

It is a great truism that you never appreciate what you have got until you loose it. This applies just as much in computing as in any other field and I am suffering at the moment from a great loss.

For the last couple of weeks I have had one of Peter Whittle's external winchester disk drives attatched to my NIMBUS PC-186 for review, and now my time is up and the drive has been returned to darkest Littlemore.

I suppose that I am rather a reactionary when it comes to computing equipment, not least because I have to pay for all my own kit. It took me a long time to pension off my lights-and-switches front-panel and change over to a keyboard, and even longer to actually go out and buy a complete computer (a BBC). This means that for long after everyone else has discovered, and then become blase about, things like floppy disks or printers, I am still wondering whether I can make do with an Army-surplus tape deck.

However, the big advantage of this inertia is that by the time I get round to actually forking out for a piece of equipment, many of the bugs have been sorted by other, wealthier users, and the real lemons have been weeded out, to use a mixture of metaphores. All of which brings me to the subject of this review, the winchester disk.

We all know that no microcomputer can hold its head up unless it has a winchester disk on the end. Many of us, if asked, could not specifically state just what it is that we cannot do now that a winchester can, and it is to these doubters that this piece is primarily addressed.

My work involves the writing of large PASCAL programs. This implies the use of a word-processor (STEED) with long text files,

compilation of multi-module source code, and linking of object code with large numbers of library files.

Users of PROSPERO PASCAL will know that certain stages of the compilation process are heavily disk-bound, and the link stage especially so. For maximum speed of compilation, therefore, it is desirable to have files on silicon disk.

I am not able to fit all of the files required onto my silicon disk and so some fiddling is required to optimise compilation speed. This is all well and good until the various files grow in number and size, the silicon disk fills and the whole shuffling process has to take place again. Thus, when all is well, I can compile quickly, but the time overhead for set-up is high, and no solution is permanent. At this point, enter Peter Whittle as fairy godfather, with 20MB external winchester.

WHITTLE SYSTEMS have recently collaborated with CUMANA, of disk drive and BBC-68XXX co-processor fame, to produce a new range of external discs for the old NIMBUS-PC range, i.e. not the AX/VX machines.

They offer a 5.25" DSDD floppy, invaluable for transferring material from IBM clones onto 3.5" drives, and a range of winchesters. These come in four sizes: 20MB and 30MB, and the high-speed 40MB and 60MB drives.

The machine I was lent was a 20MB version, in a pre-release form. In fact, all this meant was that the case was not quite the right colour and there was no in-use light on the front, the guts of the system being in release form.

Being a hardware person, and expecting problems, I set aside a spare hour to fit the upgrade. With the help of the instructions provided, it took me all of ten minutes, including looking for the screws that fell out of the NIMBUS - it really is that quick. One potential problem that was side-stepped was the need for the external SASI option on the

NIMBUS disc controller board (DCB).

Knowing that my machine was not so fitted, WHITTLE SYSTEMS lent me a board for the test. The instructions provide diagrams so that if, like me, you didn't even know that such an option existed you can see if you have got it. RM, in their infinite wisdom, have used the same connector for the SASI interface and the external 5.25" floppy interface - these are **NOT** compatible, so do check on the DCB itself. If it is not fully populated, then you probably need the upgrade.

As is so often the case, just how much the upgrade will cost depends on your relationship with RM - the standard price (and there is no educational price) quoted by Sales is £96. Those handy with a soldering iron might do the upgrade themselves, but the job involves de-soldering an awful lot of holes. WHITTLE SYSTEMS tell me that they will be offering an alternative upgrade, at a yet-to-be-finalised price.

(Those interested in a DIY SASI *upgrade should see elsewhere in this issue - **Editor**)*

So, we have the system connected, have run the menu-driven installation procedure, and created a working winchester boot disk. What is the system like in action? In my opinion, the best way to test such a device is to use it to upgrade my daily activities - the most impressive bench-marks in the world mean nothing to me if my normal, and hence most frequently-used, functions perform the same or more slowly.

To this end, I copied all of my regular compilation files onto winchester, set up the paths and tried compiling. The results were surprising.

Although WHITTLE SYSTEMS had quoted the data transfer rates of the winchester versus silicon disk, showing the winchester to be much slower, in action there was little to choose between my normal method of working and the winchester-based method. With judicious transferring of frequently-accessed files, such as libraries, to

silicon disk, compile-times were improved further, to the point where in my subjective view, there was little or no difference.

The very big plus point however was that disasters such as power glitches, the PC's current habit of hanging-up and requiring a power-down, or moments of mental aberration when I power off without remembering to save the silicon disk contents, were no longer such a big problem - loading and using STEED from the winchester is quite fast enough, and at least the back-up files are safe.

Is a winchester worth having? As always, the answer to such a question is that it all depends. Obviously, network users know that the answer is "Yes", as do users with large files to be searched, large directories etc.. If, like me, your machine is used for software development using large compiled modules, the answer is *probably* "Yes". Although compilation time may be increased, overall productivity will probably increase, as will your peace of mind. If you are writing small programs, or using interpreted languages, it is less likely that your machine will be disk-bound, and the potential improvements are smaller.

Would I buy one? That is a difficult question, as my needs are a little odd. Although I use a NIMBUS PC at work, I do not have one at home (too expensive), and for MS-DOS work I use an OPUS PCII. Thus any winchester that I bought would need to be compatible with both machines. Peter Whittle was non-committal about future developments along these lines and so until that happens, I will struggle on with floppies and silicon disk.

Prices for the drives look a little on the high side when compared with some of the offerings for the IBM clones, but it should be remembered that many cheap drives have quite slow access times compared to Whittle's machines. Also many of these cheap drives mount direct into an expansion slot - thus the extra cost includes the case and power supply. When looked at in that light, the drives look pretty good value.

My choice for stand-alone use would be one of the (relatively) low-speed drives, and I would probably pay the small amount extra and go for the 30MB machine. Ah well, I can dream can't I?

Many thanks to Peter Whittle for the loan of the drive - and please can I have another one soon?

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Z E MCP/M 2.2 & Z80 SYSTEM EMULATOR

by Trilog Software Ltd.

Review by Mel Holmes

The idea of using old 8-bit CP/M software on a machine as powerful as the NIMBUS seemed to me an odd one, and even a step backwards rather than forwards. However, I did begin to dream of running old and useful software that would certainly benefit from the vast 63.5K of TPA which TRILOG have made available (not to mention the added convenience of not having to switch machines for different tasks).

PREPARING A ZEM DISC (MS-DOS format)

Copying the ZEM software was no problem as it is a single file of under 25K. So onto my newly formatted MS-DOS disc (with system) I transferred **ZEM.EXE** from the distribution disc and **ZFERCPM.EXE** from the NIMBUS utilities disc. (I was told by the manual that these would work under ZEM).

THE 3.5" CP/M DISC

At a station on my CHAIN 64, I copied some of my software, including PIP and DDT, from 380Z/480Z 5.25" discs to a 3.5" disc in the server.

TRANSFERRING from CP/M format to MS-DOS format

Using XFERCPM, back on the PC2, I transferred files from my CP/M disc in B: to my MS-DOS disc in A:. Being very tidy-minded, and enjoying as always the neat filing facilities provided by MS-DOS sub-directories, my CP/M software was arranged one level below the root. I new, of course, that ZEM would not support sub-directories, but did not want to completely sacrifice my standards. I followed the logical course - I changed directory to the subdirectory containing the CP/M software I wanted to run, thus making it the new logged-on drive. I didn't think ZEM would mind - and it didn't. All I had to do was type A:\ZEM in order to load the emulator.

My next step was to try all the intrinsic commands (see below).

ERA - Erase file(s).DIR - Display a disk file directory.REN - Rename a file.SAVE - Save memory image to a file.TYPE - List an ASCII file to the console device.USER - Set user number (**not supported**)STAT - Display disk, file, or system information.

I must say that the operating speed of these was impressive: Disk access was very fast indeed. STAT was particularly fast, as here it's intrinsic, unlike the transient CP/M STAT. (The file attribute setting of STAT is not supported of course. All files are assumed to be DIR and R/W)

Transient commands came next in the user's guide (see below),

PIP.COM - File copy utilitySUBMIT.COM - Batch file processor.XSUB.COM - Console redirection for Submit files.DDT.COM - Dynamic Debugging Tool

so I PIPed for a while and DDTed, at no loss to my sanity or expectations.

It was time to test some software.

(Isn't it odd how easily one can skip over, or forget, some important fact the first time through a manual!)

It was also time for my dreams to be dashed, because I had not thought through the one, small, but very important word - GENERIC. At the end of the user's guide, TRILOG do point out exactly what we all know this to mean.

> *...software which do not rely on running on a specific machine, ie; do not issue calls to specialized firmware routines, do not perform direct input/output*

through hardware ports, and do not assume the existence of hardware interrupts.

However, even more important than this for most of our RM based applications is the fact that the emulator "*...passes screen codes and escape sequences on to the relevant* MS-DOS *driver within your specific machine.*"

This means that all software that produced screen output by other than direct, teletype-like printing will not work through ZEM - the code is just 'ignored'.

Some years ago now we excitedly moved away from the old style teletype screen output to much more imaginative and helpful displays. I felt cheated when RML (as we knew them) sacrificed varitext on the 480Z. The 380Z escape sequences may have been a pain to set up but, the resulting variety on the screen did a great deal to add interest and clarity. However, GENERIC software means that none of these machine specific luxuries can be supported.

The only large item of GENERIC software I could find in my library was TOUCH 'N' GO. I noted, with loathing, on my NIMBUS Network-2, that the MS-DOS/NIMBUS version(?) of this unfriendly (though useful) item is identical to the old 380Z and 480Z versions. The authors deserve negative scores for progress and user-friendliness. However, it did work first time under ZEM - a useless fact, as the MS-DOS version comes as part of the Network-2 software-bundle anyway. (What a pity RM could not get a version of this software to match the quality of the machine it was to run on!)

It was, however, an insight into the use of ZEM.

An interesting point came out of the running of TOUCH 'N' GO, which measures the users interaction time. Running the CP/M version gave typing speeds of up to 210 words per minute! (I wish it were true) Clearly any software which makes use of timed delays is not going to function acceptably under the emulator. This is not, of course, the

fault of the emulator. Such software may work quite well on a slower machine (like the IBM-PC. DIG!). I also found that, at times, the software fell behind my input speed. I could sometimes get several characters ahead of the screen. Again, this is almost certain to be the result of the timing loop in the software and not ZEM.

If anyone has a stock of indispensable GENERIC CP/M software then I suppose, for the ease of running under one operating system with MS-DOS material, ZEM could be very useful (Things like dBASE maybe). It is simple to set up, fast and friendly. To make this emulator really useful, however, we need someone to produce a specialized add-on to ZEM which will redirect 380/480z graphics displays correctly. I do not suppose many people have much useful software which fails to use the graphics and escape sequences that make for clear communication between machine and user.

TRILOG suggest that screen-configurable applications should be re-installed under ZEM to use the NIMBUS control codes and escape sequences. In this way you may even get things like CP/M-WORDSTAR to run under ZEM.

In ZEM's favour, it:

1. Needs no hardware modifications
2. Can be used as an operating system or as a utility.**>ZEM <return>** creates the CP/M environment, from which you run your old CP/M software and commands in the usual way.
>ZEM command/software [parameters] <return>, for example, uses ZEM as a utility from which to issue other commands, or run software. After execution, control passes back to MS-DOS. In this way you can effectively run CP/M software in an MS-DOS batch file amongst standard MS-DOS commands. (What an entertaining way to cause chaos)
One last point worth mentioning for those who love poking around in software: If you use a proprietary z80 or 8080 CP/M assembler and debugger with ZEM, it provides cross-assembly and cross-debugging facilities.

Eat your heart out, Eddie Shah

(or making pages while the sun shines)

As I write (or type) the aim is to produce the next issue of the Journal using ALDUS PAGEMAKER.

As readers may know, one of the most recent, and rapid, developments in microcomputing in the last 18 months has been the emergence of a phenomonen know as *Desktop Publishing*.

First seen using the MAC and APPLE laser printer, this fascinating activity has become a cult amongst both micro users and software developers. Why should this be so and what are the advantages - if any?

Two years ago, a man who now runs a company in London called *The Graphics Factory* saw what he viewed as the potential of the MAC system and borrowed £9,000 from his bank manager to by a kit. A year later he had 9 systems and business was booming. There must be something in it!

Printing and publishing have for hundreds of year been crafts monopolised by trade organisations, much like teaching, medecine and the law.

We have seen recently - most explicitly courtesy of *Rupert Murdoch* and *Eddie Shah* - that the power of the computer has been able to break that monopoly. DTP, as it is called, puts some of that power - and the flexibility that comes from it -onto your desktop.

Essentially, DTP aims to give the user control over the manipulation of text and graphics without referral to outsiders - other than those who have written the software.

It is intended to make redundant the messy tasks of literally cutting

and pasting graphics and text onto one sheet of paper. It speeds up the process of change by what could be called "warp factors" and should allow you to produce quality masters able to be mass-produced.

The mechanics are very simple.

One uses a text processor to process text (such as MS-WORD), a grphics package like PC PAINTBRUSH to produce graphics and a page-makeup program to combine the two. I am using ALDUS PAGEMAKER. The end result is squirted into a printer. You can use a dot-matrix for quick drafts, but generally people use a laser printer or send the pages directly into a typesetter.

So, when does this leave yours truly. You can read elsewhere how much fun Peter Bishop has had just getting PAGEMAKER working on his NIMBUS. I have every sympathy with the tenor of his article, which suggests that it seems more simple than it actually turns out.

In fact, the basics of PAGEMAKER are very simple and actually getting to the stage of making-up pages is very simple. One produces a document like this with MS WORD. The next step is to create a new publication with PAGEMAKER and simply place the text on the appropriate page, dropping in the odd illustration or two to liven up the dull pages of text.

And, of course, I quickly discovered that it really is a little more complicated than that! I am more than happy to bash out text or edit other people's documents and WORD is very good for putting in bold or italic type and formatting text neatly. My problem is that I am not a graphic designer and producing the pictures is more difficult.

If the User Group could afford a scanner, I could happily put all manner of photos in the Journal - but it can't, yet. This means using the services of a professional printer or type-setter - which, I feel, negates some of the purpose of PAGEMAKER.

Another, early decision I have to make using PAGEMAKER is to plan the layout of the Journal and create the master pages - in other words, think ahead.

So, it's back to the manual. As Peter Bishop says in his article, the PAGEMAKER manual/tutorial is quite good and teaches the basics in a very straightforward manner. But, when it comes to the finer points one simply can't make them up as one goes along.

I've found it fairly easy to get page numbers and a recurring date line on each page, although the way the manual put this was, I think, a little misleading.

My biggest problem is the lack of a laser printer to give me a very clear picture of what the end result looks like. I've been to several sessions watching PAGEMAKER being demonstrated and on each occasion the demonstrator has printed his efforts onto a laser printer.

To buy a laser printer would cost the User Group at least another 350 members, if you see what I mean. The fact that it would reduce production costs by around £1200 is not unimportant and I will refer to that elsewhere.

I don't want to create the impression of moaning about using PAGEMAKER. I think that is it good and has the potential to serve the Journal - and therefore members - well. I am just getting used to the demands of the program and the crying need for some good graphics input in order to liven up the pages of text.

If you've got this far, use a NIMBUS and use any of the following programs, let me have some graphics files - **please**!

AUTOCAD
In-a-Vision
Lotus 1-2-3
PC Paint
PC Paintbrush

Windows Draw
Windows Paint

Aldus PageMaker, the first steps

Peter Bishop

This article was nearly never written. ALDUS PAGEMAKER, and the winchester disk needed to run it, were ordered from RM on 6th June 1987, but were not in operation until 30th August, after a whole series of problems. The main difficulty seemed to be that my old NIMBUS (serial number 10106) was not upto the simultaneous onslaught of a winchester disk, MS WINDOWS and ALDUS PAGEMAKER. The RM solution: a (free) replacement of the NIMBUS main processor board. There's service for you...

This article (the first in a short series) has three aims:

* To explain the nature and purpose of ALDUS PAGEMAKER (for those not familiar with desktop publishing).

* To give some hints on the setting up and initial running of PAGEMAKER (for those who have just purchased it).

* To assess the cost-effectiveness of PAGEMAKER when it is used to produce texts which have to compete against others produced by conventional typesetting (for those who are thinking about getting PAGEMAKER).

At the outset it is worth recalling the comment from Steve Jobs (ex-APPLE) that desktop publishing is a passing phase, which will be superseded by advanced word processing systems.

Electronic publishing

For those unfamiliar with the idea, electronic publishing (of which desktop publishing systems are the microcomputer-based end of a

range of equipment) is the computerisation of the manual process of pasting-up material into a page design prior to printing. In the manual process, the items pasted are portions of text, artwork and photographs, to which are added headings, column lines, borders and other designs to enhance the presentation of each page. The computerised process mirrors this exactly. The input is text from a word processor, graphics, and digitised photographs, which are arranged on a page grid, with headings, borders, column lines and other design elements drawn in.

In both processes, a fair measure of skill and experience (not to mention specific traning) is required to produce an acceptable result. It must be stressed that a desktop publishing system does not automate any part of the process - it simply replaces a manual set of tools with an electronic set. Accordingly, it will not provide the user with overnight skill in page design (although it might speed up the process of acquiring such a skill).

The only way that an untrained computer user will become a skilled page designer is through trial and error, adhering to the only fail-safe principle of information technology: keep it simple!

ALDUS PAGEMAKER is an object-oriented approach to the page makeup process, in keeping with current IT philosophy. The objects (page grids, text elements, graphics, lines, etc.) each have an independent existence throughout the page makeup process. At any stage, any object can be picked up with the pointer and manipulated to modify the design. This means that no step is irrevocable - a great benefit for inexperienced page designers.

(This is also the reason for the slow printing of pages - the screen image is not simply copied as a bit map to the printer. Instead, the whole publication is recomposed from the original elements, in terms of the specific capabilities of the target printer.)

Setting up - what to do and what to avoid

ALDUS PAGEMAKER is delivered as a boxed set of manuals (prepared on... you'd never guess) and two sets of disks. The usual problem is where to start.

Before you open the package, make sure that you have a 1 (or 1.5) megabyte NIMBUS with a mouse and winchester disk, and MS WINDOWS VERSION 1.03 (check the version number - I know from bitter experience that earlier versions will not support PAGEMAKER). If possible, your version of MS WINDOWS should already be configured to drive your printer. If you are commissioning a new printer which needs a driver supplied with PAGEMAKER (such as the POSTSCRIPT driver), then get PAGEMAKER installed before you set up the printer.

When you have opened the box, ignore the IBM 5.25 inch disks, and use the 3.5 inch NIMBUS ones. Then (to start with), ignore the all the ALDUS documentation and follow the short RM installation guide. You may have to edit the installation program (INSTALL.BAT) before you start: it assumes that your winchester disk is drive C. If this is not the case, use a text editor to change all occurrences of C: to the letter for your winchester disk.

When you have installed PAGEMAKER on your winchester disk, add any new printer drivers you might require. This is an unnecessarily fiddly operation, as you need to edit the WIN.INI file to delete the old drivers, but use the WINDOWS Control Panel to install the new ones. The brief instructions provided by RM assume a combination of familiarity with WIN.INI and common sense - very risky for most RM Users. It is a good idea to make a backup copy of WIN.INI before you start, just in case...

Now take a look at the PAGEMAKER *User Manual*. On the whole it is comprehensive, clear and helpful. Its sections follow a logical sequence, and it has an index.

Your first document

The best way to start is to follow the PAGEMAKER tutorial which forms the first part of the *User Manual.* It covers all the basic page makeup techniques, and provides you with a useful PAGEMAKER Tips publication in the process. At the start, make sure that the page size of the document (either A4 or US Letter) is the same as the page size of the printer you are using.

The only other piece of advice is not to panic if something goes wrong. It is possible for several elements to end up on top of each other. This produces a jumble on the screen, but each element retains its identity. Find a corner of something which is sticking out, highlight it, and move it out of the way. Things can be pasted onto the area around the page grid, or deleted altogether - you can always bring them in again from their original files.

Some initial observations

I bought PAGEMAKER for use in a commercial enviromnent, to produce material which would be compared with conventionally produced items. The justification for the investment (some £2500 including the winchester disk, with more to come on a laser printer) is the speed of production, and the ability to control the whole process in-house. However, the quality of output has to be first rate, and PAGEMAKER must be compatible with my existing software. All my source text is on WORDSTAR. This runs to millions of words, and there is no chance of changing to another word processor. At present I use PC PAINTBRUSH for artwork.

My initial observations are as follows:

The range of PAGEMAKER typefaces is somewhat limited, and the one which I am likely to use the most *(Times Roman)* is very condensed. Not much space is left between words. (If I find a way around this, I shall report it.)

If text transferred from WORDSTAR has been entered right-justified, ALDUS PAGEMAKER does not appear to be able to un-justify it. This

is a nuisance, as it requires going back to WORDSTAR, and re-formatting the text paragraph-by-paragraph to change the justification.

Tabbing and indentation on WORDSTAR cause problems when the text is picked up by PAGEMAKER. I have no solution to this problem at present.

A conventional NIMBUS screen has several limitations. Text is hard to read, even at full size, and a full-size A4 page is just too wide for the window. This necessitates a lot of sideways scrolling to work on detailed adjustments.

The PAGEMAKER tools take a little getting used to, and care is needed to ensure that you are always using the right tool. For example, if you try to highlight a sequence of text, but are using the pointer tool instead of the text tool, the whole text block moves. Once you have placed a line or rectangle, using the appropriate tool, you need to change to the pointer tool to adjust it.

Postscript

A final request to other RM Users: how can you draw a map using PC PAINTBRUSH? I have tried several methods, including sticking a tracing on the screen, and attempting to trace around it using the mouse, but the result is hopeless. I would be most grateful for some advice.

Further reviews of aspects of using PAGEMAKER will appear when I have more experience to report.

News from the world of RM

from the Gleaner

The company released in late June and early July a whole series of price changes affecting software and hardware in the NIMBUS range. The most important of these are detailed below.

The AX and VX series are now in full production and are selling very well. Full production of the main elements of the AX and VX machines came into effect as from 29th June and RM claim to be only 14 days late from a target set 18 months ago. Initial production target is 400 units per week.

Full production of the X-series range occured over July and August, due to the very large number of model permutations.

In September there will be a second release of the X-series firmware which will make available some new features as follows:

Expansion memory support on the AT bus

102 keyboard support

Diskless Station Booting

Hercules/CGA at system boot-up

Where necessary, customers will be upgraded to this second firmware release.

One of the attractions of the AX machines is their ability to run at 12MHZ. This can present problems with IMB PC AT add-on cards and compatible software. RM have been testing a wide range of adds-ons and software at 12MHZ and if you are interested in what works at that speed contact *Mike Lloyd* at RM. Most boards are okay.

RM have at last released the NIMBUS PC PARALLEL PORT - in two versions.

The parallel port - *PN 17587* @ £44 (schools): £54 (list) -is an I/O bus board which provides an 8-bit parallel printer port (output only) and an 8-bit user I/O port for control type applications. It is only available as a user installed upgrade. It uses the same chip as the BBC micro. Some program conversion may be required and sample procedures and documentation is supplied.

Standard RM printer cables cannot be used with this interface and RM will sell you one at £9.

The other version is the PARALLEL PRINTER PORT - *PN 18642* @ £32 (schools): £42 (list) - and is factory fitted. I can't quite see the logic of that, but if you have a factory trained technician that problem - of returning the machines to Mill Street - might be overcome. This interface is designed to supply a connection to a parallel printer only.

Printers

RM have recently announced what they call a "rationalisation" of the range of printers that they offer for NIMBUS systems. As with all rationalisations this means, of course, that they have stopped supplying some makes and moved on to others. If you've bought a printer from them - and who's that rich?! - you will probably find that soon nobody knows the answer to your questions. At that point, you contact the User Group.

Anyway, what does all this mean?

First of all, the EPSON LX80 & LX86 have been replaced by the BROTHER 1109 and the EPSON RX100 by the BROTHER 1509.

The JUKI 6100 has been replaced by the BROTHER HR20 - described as a "low end daisy wheel printer" - and the good old FACIT has given way to the BROTHER HR25 - described as a *"high end daisy wheel*

printer".

RM now supply two laser printers. The HP LASERJET at £1995 is a "low cost" laser printer primarily for text applications. The TEXAS TI 2108 at a special education price of £4445 is a Postscript printer for mixed text and graphics applications, largely driven by ALDUS PAGEMAKER.

What RM don't mention is the APPLE LASERWRITERPLUS at around £3000 which works just as well with PAGEMAKER. The advantage of the TI 2108 is that it lasts longer and has lower running costs. However, the price of laser printers is falling fast and there is a strong argument for shopping around and/or waiting.

RM will supply further information and technical details if you contact the Sales Desk and can also supply also supply comments about interfacing various printers to the NIMBUS series. Essentially the EPSON standard is followed for dot matrix printers and the DIABLO for daisy wheels.

Network Server for Primary Schools

Shipment started in August of a special network server for primary schools. This is a PC186 SXN20 (1.5MB mem) with an adapted library of software consisting of:

Windows
Quest
Oxfordshire WRITE
PC Paintbrush
Steed
BBC BASIC 86
RM BASIC
RM PASCAL
RM LOGO

The product (*PN 18472*) is a snip at £1795

Nimbus Network Stations

RM have added 4 new stations to the range in order to meet a growing trend towards stations with larger memory. All have 1MB. In price terms they merely represent the old .5MB with a .5MB board put in without ordering a separate upgrade.

Under NET2, some packages will ***not*** run without this extra memory. These include DATAEASE, WORD 3 and the IBMEMULATOR.

Price Reductions!

The DCC Card, regarded by RM as better for comms than a Serial Piconet Module, was reduced in July from £132 to £80.

A very professional piece of software, LOGISTIX, has been reduced from £198 to £99 (commercial price is £395) for all stand-alone machines in the NIMBUS range. The network price remains at £395. LOGISTIX is a comprehensive planning aid which adds time management to its spreadsheet and offers both an extensive database and presentation quality graphics (whatever that means!). Not dissimilar to LOTUS 1-2-3, it has some advantages - not least of which is the now vast price difference.

The Quest for higher performance

Devotees of QUEST will have been pleased to hear of the upgrade to v1.3H - which is being shipped with all new network libraries. This new release fixes several problems and includes various enhancements covering such areas as:

Loading
Infile Command
Command Files
Catalogue and Delete Commands
Edit Command
Print, Memory & Justify Commands

Sort Command
Printer Support
Go Command
Transfer - writes data to a file in the format needed by MS WORD

Upgrade costs £15 upon proof of purchase. (*PN 16917*)

WORD 3

RM started shipped WORD 3 in July and it is now part of the network software library

It includes several major enhancements, including:

Outlining
Thesaurus
Indexing
Sorting Paragraphs & Text
Table of Contents
Paragraph Re-numbering
Hidden Text
Maths Function
Column Selection
"Side by Side" paragraphs

Upgrading for Networks costs £199 per 16 users. Standalone upgrade costs £60.

DrawMouse

This appears to be a very nifty drawing package which comes from the computer unit at Chelsea School of Art.

The program is particularly designed for applications concerned with textile design and mural, stained glass or ceramic design using modular repeats.

Various printer outputs are possible, include colour.

Details from and orders to:

Computer Unit,
Chelsea School of Art,
Lime Grove,
London.
W12 8EA

The cost is £55 for stand-alone; £120 for single network; £265 for one site and £1440 LEA licence.

Do NOT order from RM.

Update to News

(as at October 1st)

More on Printers

Further to what was said above, RM announced in late August some important changes to their printer supply list.

The BROTHER HR25 daisywheel printer has been withdrawn and has been replaced by the HR40.

This includes as standard a cut sheet feeder and tractor feed. It is claimed to be faster at 40cps and quieter at less than 55 DB.

It sells at £995 - which is £110 less than the old set-up of the HR25 with tractor and sheet feed as extras. The part number is *PN 19108*.

TI2108 Laser Printer

RM have been unable to supply this product because of lack of

supplies.

They are now supplying as an alternative the **Qume ScripTEN.** It is faster, has more RAM and fonts but has fewer software emulations and a shorter duty cycle.

However, RM feel that it is a very acceptable alternative to the TI machine and will let you have for the same price - £4445 (£5195 non-education).

There is now no doubt that the laser printer market is very fluid at the moment and the User Group is actively looking at what constitutes a suitable printer. Prices in the real market are often well below what is quoted by RM for any printer and the QUME is no exception.

RM BASIC

Release 2 is due in November and will implement the following:

Support for the X-series
Ability to run with Windows (not as an application)
Support for parallel port
Support for animation

There will be no support for large memory or random access files. RAF extensions may be purchased from SPA.

Further to what I said above, LOGISTIX is now being advertised in the computer press at £99 and will clearly be a worthwhile asset to a business studies course.

More price reductions!

RM have now reduced the prices of monitors that they supply. The NIMBUS PC-186 SANYO 12" monochrome monitors have been replaced by a cheaper PHILLIPS monitor and cable for £89. This is not suitable for the X series.

The NIMBUS PC-186 standard resolution colour monitor now comes at £220 if you buy one buy itself.

The external 5" disk drive has been reduced to £149 so that it is only £25 more than the WHITTLE/CUMANA drive!

RM NETWORK 2.1

Net 2.1 for the X-series servers is now being shipped. It is fully compatible with Net 2.0 which was released for the PC-186 networks.

Under Net 2.1 upto 48 stations can be supported with, if required, a mix of NIMBUS PC-186 and X-series stations.

DIALUP

pms have announced that their excellent comms package, DIALUP, has been reduced by £30 for education users and can now be purchased for just £59.95 (ex VAT). A special deal is available for LEA users who order more than 10 copies.

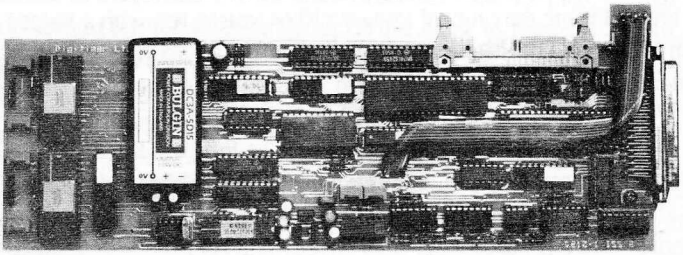
Contact Sue Froggatt on 021-643-7688

And finally...

RM have just release the first issue of RM UPDATE, a monthly update of RM educational developments. These newsletters are being sent out to various worthies, such as Journal editors and advisers. The aim is to improve communications with the customers.

Digitimer

Fast Data Acquisition and Control for RM PC-186



MODEL D210 **Available Now** (At time of press)

This single multi-function board is designed for very high speed precision data acquisition and control and fits inside the PC-186.

It contains a 16 channel multiplexer with a single very high speed 12 bit Analogue-to-Digital Converter which can transfer data to memory by interrupts, data Reads or Direct Memory Access (DMA).

The two 12 bit Digital-to-Analogue Converters can be used independently or simultaneously updated either by data Writes or DMA.

The conversion timing may be external or from the 200 nanosecond increment on board software controllable Timer.

The board also contains an 8255 PPI which gives three uncommitted 8 bit ports.

ADC

- □ *16 single-ended / 8 differential channels
- □ *4 conversion ranges ±10V, ±1V, ±100mV, ±10m Volts.
- □ 12 bit, 5µsec conversions.
- □ *8µsec /125kHz sampling with channel select.
- □ *DMA transfer.

SOFTWARE

- □ Demonstration data capture and waveform generation with full 'C' and 'ASM' source supplied.

DAC

- □ 2 Channels, 12 bits
- □ 5 ranges ±10, ±5, ±2.5, +10,+5 Volts.
- □ DMA, double buffered.

TIMER

- □ Internal source for DMA or interrupt.
- □ 1 Channel available externally.

DIGITAL I/O

- □ *3x 8 bit uncommitted ports.

*Software programmable function.

DIGITIMER LIMITED

14 TEWIN COURT
WELWYN GARDEN CITY
HERTS AL7 1AF
ENGLAND

Telephone: (0707) 328347
Telex: 299327 MEDEN G

Research Instrumentation

CASE HISTORY by Leading Edge

It is now at least six months since I wrote my last article for *RM USER*. We are still using the original NIMBUS X10 (= NIMBUS PC), with a NIMBUS AX in addition. The NIMBUS PC has now acquired a 5.25" floppy drive, primarily for importing information from IBM machines.

For the more parsimonous, the details are as follows: the drive is a 40 track MITSUBISHI 1/2 height uncased cost £67, cables and connectors about £10; it is possible to buy a case for about £40 which seems expensive for a piece of bent steel sheet. The cables do not require soldering, the NIMBUS power supply is quite adequate and it is only about an hours work to install or half an hour for an electronics engineer.

It is now possible to buy a cased drive with cables for £120. I believe RM still want nearer £200 for their full height 5.25" floppy. If you have any problems, RM Technical Support will help as will MITSUBISHI (0923 770000). If you're really stuck, contact me direct (*through the Editor*).

***N.B.** this is sure to invalidate your warranty!*

On the software side, as I mentioned in the April issue, PRO DESIGN CAD software works well on the NIMBUS PC with emulator, although there is a bug somewhere in PRO DESIGN when printing via NIMBUS PC serial port to a dot matrix printer -it occasionally misses a line, and on high resolution is horrendously slow. However, I have found no problems on machines with a parallel printer port.

We have now replaced the EASY JUNIOR accounting software with SAGE FINANCIAL CONTROLLER. Much of the motivation for this was the inflexibility of the reports generated by the system. The lack of the ability to deselect accounts with a zero balance or even to put two or three accounts with little activity on one page produced hundreds of pages with the account name at the top and zero at the bottom. I

sometimes wonder whether programmers aren't in league with the paper industry to increase the consumption of paper.

SAGE FINANCIAL CONTROLLER is a fully integrated accounts package with Purchase, Sales and Nominal Ledgers plus Stock Control with Order and Invoice processing which costs £216.

RM Technical Support weren't able to tell me how to get the IBM version to work on the NIMBUS PC, but thought it had been done before. SAGE weren't sure but suggested selecting ANSI for item A on the install program and Colour for item B. This works fine except the colours are not right.

If you don't like them, make a batch file to control the colours (see previous articles in *RM USER*), include the SAGE command in the batch file and the program will come up and run in the colours of your choice. Since this is an accounts program and vital to your business, I suggest you also include the BACKUP command.

The whole can be run from WINDOWS by specifying a PIF file as follows:

140 KB required, 256KB desired
Directly modifies: screen
Program switch: Text
Screen Exchange: Text
Close window on exit.

This uses the whole screen: press ALT-TAB to return to other applications. It will run after a fashion in a window, but you lose colour and screen handling is poor. If you wish to try it specify 192KB desired and omit *Directly modifies: screen*.

I placed an order for an AX on March 4th with a promise that I would have one of the first machines from a pre-production batch within 6 weeks.

I resisted the temptation to have an 80386 machine since it appeared overpriced at the time and it is likely that when we really need the extra power it will be available for much less. Even the AX was not competitively priced compared with some of its competitors. The promised delivery date failed to materialise.

From the middle of April until 26th May we made continual enquiries chasing an ever receding "promised" delivery date accompanied by increasingly less plausible reasons.

At one stage "our" machine was put on test on Friday and would be despatched by Express carrier on the Monday.

A phone call on the Tuesday to elicit the reason for its non-arrival was greeted with sounds of surprise and the information that "our" machine was not in the current batch.

About this time, RM was renamed *The Real Soon Now Computer Company!*

Eventually on the Friday before the Summer Bank Holiday, we were informed the machine would be on test over the holiday and ready for collection on the Tuesday after. By 9.30 that morning we had collected the machine from the factory and were away. We didn't want anyone else to have our machine!.

I realise putting a new machine in production is bound to hit snags, but the total inability to give the customer an accurate delivery date and keep to it must be deplored.

We purchased a NEC Multi Sync monitor for the AX, no delivery problems there.

PRO DESIGN is transferred to the AX. The faster processing speed and EGA screen is a vast improvement, with sixteen colours and twice the size of picture on screen, made possible by the higher resolution. PRO DESIGN provide for over twenty different displays for various ma-

chines and cards. Unfortunately RM have adpoted PEGA (not PGA) which is not on the list, so although the software provides for higher resolutions than EGA we still haven't optimised the system. A maths co-processor would help as well.

RM supplied the machine with WINDOWS installed on its 20MB hard disk (which they like to call a winchester). Initially it would not run old applications, until I realised they had omitted the file WINOLDAP.GRB. When I "borrowed" this from an IBM copy of WINDOWS everything worked fine.

I was persuaded to pay extra for a mouse. Anyone who has used WINDOWS without a mouse must wonder at the mentality of a firm that supplies the one without the other.

Incidentally, for the same money or less you can buy a LOGITECH mouse which comes with software included that allows you to insert pop up menus into existing applications such as LOTUS 1-2-3 and to use a mouse on applications that don't otherwise. Having used this on another machine, I intend to acquire one for the AX.

For communications I use the shareware program PROCOMM, which appears to work well. I am not all that enthusiastic about Email. Although PROCOMM allows you to prepare messages off line which you can then send by autodialling in the cheap rate time, the cost of Email is still high for what you get. It may be different for educational users.

(No it isn't - Ed!)

Now that BT are increasing their charges and altering their pricing structure, it strikes me that it is better not to use it and put the money saved into more BT shares!

The AX was supplied with a 5.25" floppy disc, the 3.5" drives being unavailable at the time. The good news is that the AX seems to have no problems reading from the 5.25" discs from the 360K drive on the

NIMBUS PC and vice versa. The further good news is that RM are going to upgrade all the early machines both on the hardware and software which should iron out any small problems found on these machines free of charge.

Enhancing BATch files

by John Hollingum

This is addressed to those of you who have used BAT files a bit and found something lacking in their usefulness. My contention is that BAT files on their own are not powerful enough, High-level language programs are too time consuming to develop, and in any case still lack some functions. For these reasons, it is profitable to use BAT files that make use of custom-built tools written in high-level languages.

The NIMBUS is a fairly high-powered machine. You've seen some very impressive things from it using package X or language Y. It is powerful and controllable. That is exceptin the operating system where it becomes a silicon pig with a disk drive. MS-DOS is much better than CP/M in terms of its command processor and the 'BAT language' but that is akin to saying that a *Sopwith Camel* is faster than a *Bleriot Monoplane.* Anyone with experience of the more expressive Job Control Languages of Minicomputers will find that MS-DOS BATMS-DOS BAT files need a bit of beefing up.

Why Use BAT files at all?

Why indeed; with just one exception (that I have discovered) every function that you might want to get from a BATBAT file can be reproduced in a decent high level language, providing faster execution and far greater flexibility.

These functions include calling up other programs, wildcard expansion etc. As you would expect, there is a problem in that the development time for such programs is high even for those of us who have spent many a futile hour developing libraries for PASCAL or (worse) learning C.

For this reason, most of us find it more practical to use the very much

more accessible BAT files. We can just grit our teeth and ignore one problem with BAT files, that is the speed of execution; there is another problem that we can't ignore, and that is the inflexibility or if you prefer 'limited functionality' of BATBAT files.

What are the Specific Problems of BAT files?

1) They are not interactive. More precisely, they are not capable of acting in a different way upon receiving information from the user.

2) Certain types of data and processes are completely inaccesible to them.

What can be Done To Improve BAT Files?

Ideally get someone to write a compiler for an extended version of the 'BAT Language'. No volunteers?.

Pragmatically, you can identify those functions that you can't get, or can't get fast enough and try to handle those
in a high-level language providing small tools that can be used in BAT files. The language used should be capable of being compiled into self-contained directly-runnable object code.

I can strongly recommend TURBO PASCAL as a language with a very fast development time. You could try using MICROSOFT C which has a special relationship with MS-DOS (same parent) and hence can achieve many arcane effects in a relatively direct way. Unfortunately C is not really a High-level language. Officially it is a *Systems Implementations Language*: to me its a jet-propelled assembler.

Useful Mechanisms In BAT Files

The principal problem of BAT files is getting the flow of control (using the IF statement) to be controlled by more than just the following things:

EXIST Is a certain file there

== Comparison of strings. Comparing to 'argument' or Environment variables.

ERRORLEVEL Did the last program crash ?

These standard tests can be perverted to other uses eg:

```
ECHO Garbage >E:TESTFILE
ECHO This program requires all space on silicon disk
(Drive E:) Deleting
ECHO ALL files
DEL E:*.*
REM DEL will ask them to confirm.
IF EXIST E:TESTFILE GOTO ABORT
REM If it's still there, they must have chickened out.
```

Note that this uses two seperate tricks to acheive inter action. First, it uses the ability of the DEL command to provide a prompt and take different action according to responses; second it demonstrates the creation of a file whose sole purpose is to check some status. This is clumsy and very limited in use.

For me at least, a great breakthrough was the discovery of a program called RESP. This is an authentic *Folk Program* which I have found attributed to several authors under various names. In keeping with the tradition, I have written versions in C and PASCAL. This program provides the ability to have menu response in BAT programs. The program itself communicates with the user and the program communicates with the BAT file via 'exit codes'. These normally indicate error states at the termination of a program and can be examined by ERRORLEVEL. Here's an example of the output of a BAT file that uses it:

```
Extremely Fancy Boot Program... Please select Package:
 M: MegaWord
 W: WonderSheet
```

```
B: BrillData
O: Exit to operating system
—>
```

Here is the program that produced the above. Note that the —> is produced by RESP itself.

```
:START
ECHO Extremely Fancy Boot Program... Please select
        Package:
EMPTYLINE
ECHO  M: MegaWord
ECHO  W: WonderSheet
ECHO  B: BrillData
ECHO  O: Exit to operating system
RESP MWBO
IF ERRORLEVEL 4 GOTO OS
IF ERRORLEVEL 3 GOTO MW
IF ERRORLEVEL 2 GOTO WS
BRILDATA
GOTO OUT
:MW
MEGAWORD
GOTO OUT
:WS
WONDERS
:OUT
GOTO START
:OS
```

Note that on the command line of RESP, the valid responses are supplied. RESP doesn't care about upper and lower case but will not finish until it has something valid. On exit from RESP, the exit code corresponds to the position of the response given on that list on the command line.

The order of testing the different ERRORLEVELS may seem a little

awkward but note that ERRORLEVEL 1 means *exit code is* 1 OR HIGHER' so you must start with the highest.

Having seen this clever little program, I started making all kinds of useful programs using the same mechanism.

WRITABLE

A major cause of frustration on our network amongst confused novices and embarrassed *experts* alike was the unhelpful tendency of programs to fall over when writing to files.

This happened when the program found that the drive to which they were trying to write files was read-only.

As 90% of programs on the network are invoked via BAT files, I decided to write a program that would check the current drive. If it found that it was R/O it would demand a new disk drive name until the user provided a writable one. Simply calling the program up at the start of a BAT file ensured that no unpleasantness would ensue.

The following is an example of the use of WRITABLE, and using EXIST. First to detect if it is necessary to load the silicon disk and second to detect if loading was complete (WSMSGS is the last file to be copied) . Note the line DEL WS.COM which is to signify to later runs of the program that ws has not been loaded.

```
echo off
writable
if exist e:ws.com goto run
copy p:\files\ws*.* e:
if not exist e:wsmsgs.ovr goto oops1
goto run
:oops1
echo Insufficient disk space on E: to copy WS programs. De-
lete a few
```

```
echo files on E: and try again.
del e:ws.com
goto exit
:run
e:ws %1
goto exit
:exit
```

NETDRIVE

You have no doubt heard of NORTON UTILITIES. If not rush off and buy them, they are intended mainly for the IBM PC but can be used to great effect with the NIMBUS if a little caution is used.

These programs don't always like network drives and produce rather unhelpful error reports when asked to do certain things to them. For this reason I protected the user from the program and the program from the user by providing BAT files to invoke certain of the utilities.

The NETDRIVE program checks the current or specified disk drive to see if it is a network drive. It returns exit code 1 if it is a network drive and exit code 0 if it. The following file is called DS.BAT and it controls the execution of a directory sorting utility called DS:

```
echo off
netdrive %2
if errorlevel 1 goto oops1
p:\norton\ds %1 %2 %3
goto out
:oops1
echo The directory to be sorted is on a network drive.  Sorry
DS
echo can't sort them
:out
```

Note that %2 (the second argument provided when calling up DS.BAT) is known to be the one where (if at all) a drive or treename will be

specified. This argument is handed on to NETDRIVE. If %2 contains anything then NETDRIVE will check this to see if it specifies a network drive, otherwise it will test the current drive.

Address Detectors

This is a useful class of programs. Some machines on a network will not be quite as other machines. For example I was fairly anxious (given previous experience) that *all* machines on the network should be PCN1s with 1MB of ram.

This meant that no-one would develop expectations on one machine that were frustrated on another. IBM being IBM, it was not long before we *had* to have two machines with 5.25" disk drives. These were fitted. Suddenly these two machines were the only ones on the network with no silicon disk drive on E:. This is because the addition of the disk drive shuffled all the drives above C: up by two letters.

As many of the BAT files (including AUTOEXEC) and *all* of the users expected such a drive we had a bit of a problem. I wrote a program in PASCAL called XTERNDRV that 'knew' the network addresses of these two machines and indicated whether the host machine was one of them via ERRORLEVEL.

Here is a particularly exciting excerpt from our AUTOEXEC file containing a call to XTERNDRV:

```
echo off
ECHO One moment please.
p:\xterndrv
if errorlevel 1 goto XTD
goto cont
:XTD
p:assign e g
goto cont
:cont
set CP=HERMES
```

If you have never seen the assign command before, suffice it to say that it fools the machine into thinking that the silicon disk is called E: after all.

Digressing for a moment there is a very subtle but quite definite **BUG** in ASSIGN. In it, the first drive name is a 'pseudo drive', the second must be an existent drive. There is validation of the parameters of ASSIGN such that the first argument must be within the range of existing hardware drives, and the second parameter can be any drivename between A and LASTDRIVE. This is quite simply **THE WRONG WAY ROUND**. For example if you tried this bizarre command it would have a go at doing it:

```
ASSIGN A Z
```

Even though there is no Z drive. It will however object to the perfectly reasonable:

```
ASSIGN Z A
```

But (as the chat show host would say) enough of this.

Access control

Generally speaking, this is not something that you can safely do within a BAT file. There is however an exception.

Suppose you have a laser printer (*toner cartridge £80, each one does 2,000 sheets*) and you don't want unauthorised people using it. It is possible to write a program capable of connecting up PRN to this shared device without the user needing to know how to use the USE command and without displaying the password to the printer on the screen.The program interrogates the user for the password and makes the connection to the printer. Here is a BAT file that uses a program like this called LASERPW:

```
echo off
p:\pctrl\laserpw %1
if errorlevel 1 goto out
prompt $e[1m$l LASER $g $e[2m $p $g
set cp=LASER
goto out
:out
```

Note that the BAT file contains only the relatively trivial changes to the prompt and an environment variable. I would, in this case have preferred to carry out these processes inside LASERPW, but as it says in the MS-DOS *Programmers' Reference Page 4-3):*

A program cannot change the MS-DOS environment values as the Set command does

Quite a number of John's utility programs will be appearing in the old library - details in the next journal or newsletter.

.

Micro-Mart (1)

Several DIGITIMER model D204 256K silicon disk boards for either 380z or 380Z-D, with disk software.

Best offers: tel 0707-371313

Stand-alone to SASI upgrade

by Mike Trotter

If you have a stand alone NIMBUS, you will fairly rapidly become frustrated by the problems of finding the particular disc which contains the application that you wish to use. Perhaps you will have seen a network system or even a standalone NIMBUS with a hard disk.

A hard disk is capable of storing large quantities of data, commonly 20MB but increasingly 30, 40 or even 60MB and retaining that data after the power is switched off!. If I further say that the cost of hard disc storage has come down from around £1500 to around £900 for 40 MB, and the smaller 20 & 30MB systems around £500 - £600, the figures begin to compare very favourably with a 720K (0.7MB) floppy disk costing around £200. In addition to the reduction in cost per byte stored, the increased speed of access and above all the sheer convenience of the hard disc makes it a very desirable upgrade. Furthermore, WINDOWS will work properly without constant disc swapping.

My system boots up with the usual WINDOWS display of a drive catalogue, but with WORD and my CARDINDEX file preloaded. I can move in to WORD at the click of the mouse and back out by pressing ALT TAB. Very convenient.

Unless your NIMBUS is a network station without a disk drive, it will have a DCB or disc controller board installed. Before attempting to examine your system, switch off and disconnect from the mains.

With the lid removed (*see Owners handbook: How to take it apart*) this board is likely to be nearest to the power supply. It has at least two connectors via ribbon cables. One, nearer to the front links to the disc drive itself. The other, nearer to the back, links to the main computer bus. The board itself is a long board running the full slot length from front to back of the NIMBUS. The board should have its RM

PN *12865* on its lower edge.

This board should only be partly populated with integrated circuits. If it is fully populated you're in luck! In the early days a SASI (see below) option was offered for £25 and I'm sure that I was not alone in not understanding what it was for but at that price ordered it anyway! Thus there may well be NIMBUSES around with SASI interfaces already install. If so, read no further!

SASI, to the best of my knowledge, stands for *Shugart Associates Systems Interface*, SHUGART being well known disc drive manufacturers. To add further to the confusion, there is also an SCSI, (*Small Computer Systems Interface*), associated with hard discs. I think that SASI is a sub-set of SCSI or is it vice-versa?

In order to run a hard disc bought from RM, CUMANA or from WHITTLE SYSTEMS it is necessary to have a SASI disc controller board. RM no longer sell the upgrade for the price of the chips, the price having risen to over £100. As the necessary chips cost somewhere around £25 a DIY conversion is attractive, though no doubt will invalidate your warranty if your machine is still under guarantee.

The IC's and other components are available from many different suppliers. However two well known and convenient ones are RS COMPONENTS *PO Box 99, Corby, Northants NN17 9RS* or if buying privately, cash with order, as ELECTROMAIL *PO Box 33 Corby Northants,. NN17 9EL.* Most educational institutions have current RS catalogues. An alternative is FARNELL LTD. *Canal street, Leeds (0532 636311)* Official Order, ACCESS or VISA cards.

Caution: A colleague has a SERIES A DCB. He has carried out the upgrade as described above but can't get it to work..yet! We're still working on it.

Read the whole of these instructions first:

You will need:

Good eyesight or a good magnifying glass
Good lighting
Fine (1mm) tip soldering iron. (approx 16 watt)
fine (22 swg) solder.
de-soldering tool eg RS 544-516.
Patience!!

The following components:

(Note carefully the distinction between standard TTL, LS TTL and ALS TTL devices. If you don't understand this, don't worry, just make sure your chips are correct!)

7438	1 off	14 pin IC 20
74LS141 off	14 pin IC 28	
74LS173	1 off	16 pin IC 18
74ALS02	1 off	14 pin IC 19
74ALS08	1 off	14 pin IC 17
74ALS21	1 off	14 pin IC 22
74ALS32	1 0ff	14 pin IC 24
74ALS74	3 off	14 pin IC 11,IC 25, IC 26
74ALS244	1 off	20 pin IC 12
74ALS374	1 off	20 pin IC 13
74ALS638	1 off	20 pin IC 14

You may wish to **socket** your chips. Errors can more easily be rectified. If so you need:

11 off 14 pin sockets
2 off 16 pin sockets
4 off 20 pin sockets

The following additional chips are already present on a stand alone disk controller board:

IC1 7416 IC2 74ALS273
IC3 74LS244 IC4 7416
IC5 74LS173 IC6,IC7 74LS243
IC8 74LS244 IC9 2793
IC10 74ALS138 IC15 74ALS04
IC16 74ALS08 IC21 74ALS74
IC23 74LS221 IC27 74ALS244

37 way socket J5 (female) for an external winchester FARNELL 146-277 (about £6 - £7) or an 34 way male for internal winchester at J4
.

150R **resistor** network 'chip' RN2. FARNELL 143-495
R8 is 4k7 (4 700 ohm) 0 .25 W
R9 is 39k (39 000 ohm) 0 .25 W
R10 is 330R (330 ohm) 0 .25 W

Capacitors:

C11 - C 21, C 23, C 25, C 28, C 30 - C 32 are all 22 nF 63 V FARNELL 104-854. They can be inserted either way round.
C 22, C 24, C 27 are Tantalum 10 uF, 10 V. FARNELL 100-869
C 29 is also Tantalum 47 uF, 16V.
C 26 is 10 nF polyester. RS 125-777

Diodes D2 - D4 are 1N-4001 (FARNELL 1N-4001 10 pack)

Procedure:

Don't rush the job. Time and care will be rewarded.

First mount the board carefully in a vice, using soft packing to prevent damage to the board. You need to be able to access both sides of the board at once. .

Clearing the IC holes.

Depress the plunger in the desoldering pump. Using the pump on one side, carefully use the soldering iron to melt the solder in the empty IC socket holes.

Release the plunger to suck away the molten solder. Repeat this operation for each of the 208 holes, ejecting the waste solder from the pump from time to time. (I did say patience was required!) Check that each hole is completely clear of solder.

Next comes the insertion and soldering of the IC's or their sockets. You will need to a flat raised surface about 1 cm high.

Insert the IC in its location. There is an identifying notch at one end of the chip. Pin 1 is immediately below this or else there is a small dot immediately above pin 1.

The IC's should all be orientated in the same way as the original ones on the board, i.e. pin 1 is bottom left, and the writing on the IC should be the correct way up.

Turn the board over and place on the raised surface so that the IC is held in position flush with the board surface. Solder the two opposite corner legs first and check that the IC is flush with the board.

Methodically solder each of the remaining legs in turn. Unless you work methodically you will eventually miss a leg and there will be a faulty connection, so do be methodical!

After each IC is soldered, turn the board over and inspect the legs of the IC to ensure that the solder has run on each one. Repeat this operation for all of the IC's.

Go through the IC list again to check each is in the correct place. (If you have blundered, it may be easiest to cut each leg of the IC with sharp cutters, then desolder each pin in turn, clean up the holes and start afresh with a new IC.)

Next insert the **resistor network and the resistors.**

The resistor network RN2 has an identifying notch similar to the IC's and has the same orientation. Resistors R4 -R7 are not present. It doesn't matter which way round the resistors go, but they will tend to drop out. Don't try to hold them in with your finger, they get hot!

Diodes are next. Get them the correct way round, silver band to top of board.

When inserting the **capacitors**, the legs will need to be bent slightly to the correct width. Remove some of the excess length before insertion. Make sure that the polarity is correct for the tantalums. These must be inserted the correct way, the positive leg to the top , yellow painted part of the mounting location.

Check each of the resistors, diodes and capacitors is in the right location and then trim off surplus ends neatly.

The **37 way connector** comes next. One row of pins are all to a common ground line. The 10th pin from the bottom of the board of the other row is also grounded by a very thin track connection. You will have to make an appropriate hole in the blanking plate from the back of your NIMBUS.

Finally, on the left of the board there are two **track links, LK1** and **LK2.**

Although both of these are short circuit, i.e. made, during etching, LK2 needs to be broken for hard disc SASI operation. This can be acomplished by repeated very careful cutting with a sharp blade, eg a Stanley knife.

Test regularly with a multimeter set on the lowest resistance range until the break is achieved. Take care not to damage any adjacent tracks.

Fault finding:

First check all IC's are in right way round and in the right sockets.

Check each IC pin is properly soldered from both sides, preferably with a magnifying glass.

Check polarity of capacitors.

Check pins on 37 way connector with a multimeter. There should not be any connection between front and back rows except for pin 10 as described above.

Next check very gently but firmly round each solder point, particularly of the IC's feeling for a solder splash connection that should not be there. This is best done with a very small screwdriver or blunt blade.

Micro-Mart (2)

Examine doubtful spots with the magnifying glass and gently scratch off any solder splashes. In bad cases remove solder with pump and resolder.

380Z, 56K, MDS2, 40/80, HRG

380Z, 32K, MDS1

with software and documentation

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DTI MODEM TANDATA 512TP

At the User Group Day Meeting in Wolverhampton on July 11th, Stewart Wainwright spoke on communications and during the course of his sessions mention was made of problems with the above modem.

Several teachers have been using the TANDATA modems which were provided under the DTI scheme with 480z using TTNS software at running at 300/300 baud. This rate seemed to give no problems (*as your Editor can testify*), but when running at 1200/75 the error message &NCD was received several seconds after the *...connected...* message.

Investigation by WOLVERHAMPTON's Technical Support Service revealed that a new cable, with an additional connection, was needed to use the TANDATA at 1200/75.

The pin connections are as follows:

TANDATA		480Z
20		1
	nu	2
	2	3
	7	4
	5	5
	nu	6
	nu	7
	3	8

where nu = not used.

It was also decided to try and use the modems with an RM NIMBUS PC-186 and the new CONTACT comms software (which is now

bundled with educational networks), using the AUX port set to IO and a speed of 1200/75.

Again, the same error message was received and as with the 480z a new cable was required. At the same time a new cable was made for the DACOM DSL2123AD modem with the following connections:

DACOM	NIMBUS	TANDATA
7	1	7
3	2	3
7	3	7
nu	4	20
2	5	2
nu	6	nu

Our thanks to Stewart for this useful information.

Can those members who are successfully using either 380/480z or NIMBUS for comms with DTI modems please write and tell us how they are using the kit?

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Computers supported:

AlphaStat, AlphaCalc & AlphaPlot : RM 380Z, 480Z and Nimbus range.

DeltaStat & DeltaPlot: RM Nimbus range.

The same versions run stand-alone and on networks.

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Rather than occupying space this month with a long list of item prices, we are taking the opportunity to answer some of the common questions asked about Edhitec services.

Edhitec began trading just over two years ago with the aim of supplying hardware and software to Educational establishments at the lowest possible prices together with fast, efficient service. Our specialisation has been based on RM Nimbus PC products but this now includes the full Amstrad range and hence IBM compatible software (certain items running on the Nimbus PC186 under the IBM emulator). We have always been able to supply a full range of peripherals for all educational micros and by buying in bulk direct from manufacturers, can offer top discounts on our products.

Being a small, but expanding business means that orders can be given individual attention to ensure fast response. Over 80% of our customers 'repeat order' and we can honestly say that we have not received a single complaint about the quality of service we provide.

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Finally, a very brief selection of products and services:-

Edhitec 8TO16 Cub adaptor	- Display full 16 colours on a Microvitec Cub monitor when using Nimbus PC186 only £14.90!
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Prices exclude VAT and delivery which is charged at cost.

NIMBUS BASIC PROGRAMMER'S UTILITY.

By John Edyvane.

How good to be able to program all those function keys to save time when
programming. I have a file called FUNKEY on my RMBASIC and BBCBASIC86
disks which is set up to autoload and run after the language is loaded.

This is accomplished by means of an autoexec.bat file with the word FUNKEY
following the name of the language:

RM BASIC:
basic fkey

BBC BASIC:
bbcload fkey

The programs FUNKEY not only ascribe a frequently used function to each function key, but additionally set the screen modes and colours to those
which I prefer, greet me in a moderately civilised manner and also remove
themselves from memory at the end. The programs may also include any setting-up instructions which you like, e.g. changing the key-board repeat
rate etc.

The key functions included in my programs are as follows:

F1 and F2 provide 80- and 40- column respectively. They are useful when
recovering from an error in a program, when the colours have been set to

some unreadable combination.

F3 and (in RMBASIC only) F4 provide line editing. F3 in RMBASIC recalls
the last error line for editing.

F5 and F6 provide listing, either of the whole program (F5),or waiting for
a defined range.

F7 lists procedures and variables in RMBASIC, and procedures in BBCBASIC.

F8 clears screen and homes cursor.

F9 runs the program in memory.

F10 Blacks out the screen.

F10 is included because it is undesirable to leave the monitor display for
long periods (it causes burning of the phosphors in the tube - as seen on
many arcade video games), but similarly it is undesirable to keep turning
the computer on and off - this shortens the life of the semiconductors. So a
simple press of F10 before going off for a break overcomes the problem, and
can be reversed by a press of F1 or F2 on return.

To help me remember which key does what, I have stuck plastic label strips
alongside the keys. No doubt, you will customise the programs to suit your
own requirements, but the listings which I use are as follows:

RMBASIC:

```
 10 SET MODE 80 : SET COLOUR 0 TO 15 : SET COLOUR
3 TO 0 :          SET PAPER 0 :

   SET PEN 3 : SET BORDER 8 : CLS
 20 SET FKEY 1 TO "set m. 80:set col. 0 to 15:set col. 3to 0:set
pap.

        0:set pen 3:set bo. 8:cls" + CHR$(13)
 30 SET FKEY 2 TO "set m. 40:set col.0 to 13:set col.150:cls"
+

      CHR$(13)
 40 SET FKEY 3 TO "e." + CHR$(13)
 50 SET FKEY 4 TO "EDIT "
 60 SET FKEY 5 TO "cls:h.:l." + CHR$(13)
 70 SET FKEY 6 TO "cls:h.:LIST "
 80 SET FKEY 7 TO "?!:lvar:procs" + CHR$(13)
 90 SET FKEY 8 TO "cls:home" + CHR$(13)
100 SET FKEY 9 TO "run" + CHR$(13)
110 SET FKEY 10 TO "set bo. 0:set pap. 0:set col. 0 to 0"
CHR$(13)
120 SET CURPOS 35, 12 : PRINT "Hello John" : HOME
130 FOR C := 1 TO 1000 : NEXT : CLS
140 NEW
```

BBCBASIC86:

```
 10 *KEY 1:*KEY 2:*KEY 5:*KEY 6:*KEY 9:*KEY 0:*KEY
7:*KEY          8:*KEY 3
 20 *KEY 1 MO. 0:VDU 19,0,6;0;:VDU 19,1,0;0;:|M
 30 *KEY 2 MO. 1:VDU 19,0,6;0;:VDU 19,1,0;0;:CO. 1:|M
 40 *KEY 3 E.
 50 *KEY 5 CLS:L.:|M
 60 *KEY 6 CLS:L.
```

```
 70 *KEY 7 L. IF DEFPROC|M
 80 *KEY 8 CLS:|M
 90 *KEY 9 RUN:|M
100 *KEY 0 MO. 1:VDU 19,3,0,0,0;:|M
110 *FX6,0:REM Sets up printer.
120 MODE 0:VDU 19,0,6;0;:VDU 19,1,0;0;
130 PRINT TAB(35,16);"Hello John."
140 LT% = TIME + 300:REPEAT UNTIL TIME>LT%
150 CLS:NEW
```

Note that in BBCBASIC, use of the **SHIFT-BREAK** combination will re-run the
FKEY program, which could cause problems if SHIFT-BREAK is pressed in
error. (It will be impossible to recover the program which was in memory
using the OLD command, since it will have been replaced with FKEY.)

The shorthand instructions (e.g. bo. for border) enable more commands to be
used in the function key buffers, and also save you time in typing in the
programs!

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An RM User Group Newsletter

Conscious of the fact that a quarterly Journal is only published four times each year (!), I am urgently looking at filling the gaps between the heavy stuff with a regular newsletter.

What a good idea! I hear you cry. Very true, but two things follow from such an idea.

Firstly, there would have to be enough material to maintain a newsletter of 4-8 pages, say at least four times a year, and a quarterly Journal of around 72 pages.

Secondly, the cost of printing and posting such newsletters would have to be met.

In terms of material, I feel that we can cope - if you all wrote something! The point is, a newsletter could more easily handle letters with problems and their solutions than a quarterly Journal. News from RM is now coming to me very regularly and would usefully go into a newsletter. With a couple of articles from new contributors, the material problem would be easily overcome. In fact, I believe that the existence of such a publication would generate material.

The cost of just printing and mailing out a single newsletter would be around £105. That's equivalent to 7 current membership fees! Four issues of a newsletter would cost about 30 new members.

My own view is that the existence of such a newsletter would both help retain members and generate new ones.

However, as in all things, the Group exists to serve its members and your response to such an idea is sought.

If you have any views on the idea of a newsletter, then please let me know.

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